

**Chapter: 22**

**State(s): Washington**

**Recovery Unit Name: Upper Columbia**

**Region 1**

**U.S. Fish and Wildlife Service**

**Portland, Oregon**

## DISCLAIMER

Recovery plans delineate reasonable actions that are believed to be necessary to recover and protect listed species. Recovery plans are prepared by the U.S. Fish and Wildlife Service, and in this case with the assistance of recovery unit teams, State and Tribal agencies, and others. Objectives will be attained and any necessary funds made available subject to budgetary and other constraints affecting the parties involved, as well as the need to address other priorities. Recovery plans do not necessarily represent the views, the official positions or approval of any individuals or agencies involved in plan formulation, other than the U.S. Fish and Wildlife Service. Recovery plans represent the official position of the U.S. Fish and Wildlife Service *only* after they have been signed by the Director or Regional Director as *approved*. Approved recovery plans are subject to modification as dictated by new findings, changes in species status, and the completion of recovery tasks.

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## **ACKNOWLEDGMENTS**

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# **UPPER COLUMBIA RECOVERY UNIT**

## **CHAPTER OF THE BULL TROUT RECOVERY PLAN**

### **EXECUTIVE SUMMARY**

#### **CURRENT SPECIES STATUS**

The Fish and Wildlife Service issued a final rule listing the Columbia River and Klamath River populations of bull trout (*Salvelinus confluentus*) as threatened species under the Endangered Species Act on June 10, 1998 (63 FR 31647). The Columbia River Distinct Population Segment is threatened by habitat degradation and fragmentation, blockage of migratory corridors, poor water quality, and past fisheries management practices such as the introduction of nonnative species.

As required by the Endangered Species Act, the U.S. Fish and Wildlife Service has developed a plan which when implemented will lead to the recovery and ultimate delisting of the Columbia River Distinct Population Segment. An overall recovery team with membership from the States of Washington, Oregon, Idaho, Montana, and Native American Tribes was established to develop a framework for the recovery plan, provide guidance on technical issues, and ensure consistency through the recovery planning process. Within the Columbia River Distinct Population Segment, the recovery team has identified 22 recovery units. Recovery unit teams were established to develop specific reasons for decline and actions necessary to recover bull trout.

Recovery units were identified based on three factors: 1) recognition of jurisdictional boundaries, 2) biological and genetic factors common to bull trout within a specific geographic area, and 3) logistical concerns for coordination, development, and implementation of the recovery plan. In Washington, to facilitate the recovery planning process and avoid duplication of effort, the recovery team has adopted the logistical framework proposed in the 1999 draft Statewide strategy to recover salmon, "Extinction Is Not An Option." Based on this draft strategy, bull trout recovery units overlap the State's salmon recovery regions. The identification of Lower Columbia, Middle Columbia, Upper Columbia, Snake, and Northeast Washington recovery units will allow for better

coordination during both salmon and bull trout recovery planning and implementation.

The U.S. Fish and Wildlife Service, in cooperation with the Washington Department of Fish and Wildlife, solicited participation with the Upper Columbia Recovery Unit Team from individuals having bull trout expertise or other technical expertise applicable to bull trout recovery planning. The team had representation from the U.S. Forest Service, Washington Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service. The Upper Columbia Recovery Unit Team believes that coordination with the National Marine Fisheries Service salmon recovery efforts is essential for the recovery of bull trout in the Upper Columbia Recovery Unit.

The Upper Columbia Recovery Unit Team identified three core areas including the mainstem and tributaries of the Wenatchee, Entiat, and Methow Rivers. Based on survey data and professional judgement, the Upper Columbia Recovery Unit Team also identified local populations of bull trout within each core area. Currently there are six local populations in the Wenatchee Core Area, two in the Entiat Core Area, and eight in the Methow Core Area. Additional local populations may be added to this total as additional information is gathered in areas outside the currently designated core areas for this recovery unit.

Recent information on migration and use of the mainstem Columbia River by bull trout has been verified. Tagging studies conducted by the Chelan County Public Utilities District have monitored movements of bull trout tagged and released at Rock Island, Rocky Reach, and Wells dams. In addition, studies conducted by the U.S. Fish and Wildlife Service have verified the movement of adult bull trout into the lower Wenatchee River. Most likely, these tagged fish entered the mainstem Columbia River to overwinter and feed. The mainstem Columbia River contains core habitat elements for bull trout that are important for migration, feeding, overwintering, and eventual recovery. The Upper Columbia Recovery Team believes that further research on migrational patterns and genetic similarities is needed to better understand the role that the mainstem Columbia River will play in recovery.

The Lake Chelan basin is historic bull trout habitat, but their presence has not been documented since the late 1950's, and they may have been extirpated from the basin. However, complete surveys in remote tributary reaches of the Lake Chelan basin have not been conducted and further investigation is needed. While there are anecdotal reports on bull trout occurrence in the Okanogan River, the current distribution within the Okanogan basin is unknown. The Upper Columbia Recovery Unit Team recommends that expanded surveys be conducted in each basin to verify status and distribution.

## **HABITAT REQUIREMENTS AND LIMITING FACTORS**

A detailed discussion of bull trout biology and habitat requirements is provided in Chapter 1 of this recovery plan. The limiting factors discussed here are specific to the Upper Columbia Recovery Unit Chapter.

Within the Upper Columbia Recovery Unit, historic and current land use activities have impacted bull trout local populations. Some of the historic activities, especially water diversions, hydropower development, forestry, and agriculture within the core areas, may have significantly reduced important fluvial populations. Lasting effects from some, but not all, of these early land and water developments still act to limit bull trout production in core areas. Threats from current activities are also present in all core areas of the Upper Columbia Recovery Unit.

## **RECOVERY GOALS AND OBJECTIVES**

The goal of the bull trout recovery plan is to **ensure the long-term persistence of self-sustaining, complex interacting groups of bull trout distributed across the species' native range, so that the species can be delisted.** To achieve this goal the following objectives have been identified for bull trout in the Upper Columbia Recovery Unit:

- Maintain current distribution of bull trout and restore distribution in previously occupied areas within the Upper Columbia Recovery Unit.
- Maintain stable or increasing trends in abundance of bull trout.

- Restore and maintain suitable habitat conditions for all bull trout life history stages and strategies.
- Conserve genetic diversity and provide opportunity for genetic exchange.

## RECOVERY CRITERIA

Recovery criteria for the Upper Columbia Recovery Unit are established to assess whether actions are resulting in the recovery of bull trout in the basin. The criteria developed for bull trout recovery address quantitative measurements of bull trout distribution and population characteristics on a recovery unit basis.

1. **Distribution criteria will be met when bull trout are distributed among at least 16 local populations in the Upper Columbia Recovery Unit.** The 16 identified local populations are currently distributed within the Wenatchee (6), Entiat (2) and Methow (8) core areas and are comprised of the migratory life-history form. For recovery to occur, the distribution of these migratory local populations should be maintained, while abundance is increased. Designation of local populations is based on survey data and the professional judgement of Upper Columbia Recovery Unit Team members. Further genetic studies are needed in order to more accurately delineate local populations, quantify spawning site fidelity, and determine straying rates. The complete distribution of resident local populations in the recovery unit is unknown. The Upper Columbia Recovery Unit Team recommends that further studies be conducted in the Wenatchee, Entiat, and Methow core areas to elucidate the current and recovered distribution of resident bull trout in the recovery unit. Geographic distribution of resident local populations should be identified within 3 years and actions needed to implement re-introduction efforts will be incorporated into review of the Upper Columbia Recovery Unit plan. Additional local populations may be added to this total as additional information is gathered in areas outside the currently designated core areas for this recovery unit.

2. **Abundance criteria will be met when the estimated abundance of bull trout among all local populations in the Upper Columbia Recovery Unit (Wenatchee, Entiat, and Methow core areas) is between 6,322 and 10,426 migratory fish.** Recovered abundance ranges for the Wenatchee (1,876 to 3,176), Entiat (836 to 1,364), and Methow (3,610 to 5,886) core areas were derived using the professional judgement of the Team and estimation of productive capacity of identified local populations. Resident life history forms are not included in this estimate, but are considered a research need. As more data is collected, recovered population estimates will be revised to more accurately reflect both the migratory and resident life history components.
3. **Trend criteria will be met when adult bull trout exhibit a stable or increasing trend for at least two generations at or above the recovered abundance level within the Wenatchee, Entiat, and Methow core areas.** The development of a standardized monitoring and evaluation program that would accurately describe trends in bull trout abundance is identified as a priority research need. As part of the overall recovery effort, the U.S. Fish and Wildlife Service will take the lead in addressing this research need by forming a multi-agency technical team to develop protocols necessary to evaluate trends in bull trout populations.
4. **Connectivity criteria will be met when specific barriers to bull trout migration in the Upper Columbia Recovery Unit have been addressed.** The Upper Columbia Recovery Unit Team recommends that to adequately address habitat problems in the Methow core area (*e.g.*, low instream flows, grazing, culverts, and diversion dam barriers), and to recover bull trout, basin-wide conservation efforts (*e.g.*, Habitat Conservation Plans) must be developed and implemented. The U.S. Fish and Wildlife Service working with Federal, State, and private entities, and in coordination with local governments, needs to secure quality habitat conditions for bull trout. These efforts should be coordinated with ongoing National Marine Fisheries Service salmon recovery actions to avoid duplication in planning and implementation.



The Upper Columbia Recovery Unit Team expects that the recovery process will be dynamic and will be refined as more information becomes available. Future adaptive management will play a major role in recovery implementation and refinement of recovery criteria. While removal of bull trout as a species under the Act (*i.e.*, delisting) can only occur for the entity that was listed (Columbia River Distinct Population Segment), the recovery unit criteria listed above will be used to determine when the Upper Columbia Recovery Unit is fully contributing to recovery of the population segment.

## **ACTIONS NEEDED**

Recovery for bull trout will entail reducing threats to the long-term persistence of populations and their habitats, ensuring the security of multiple interacting groups of bull trout, and providing habitat and access to conditions that allow for the expression of various life history forms. The seven categories of actions needed are discussed in Chapter 1; tasks specific to this recovery unit are provided in this chapter.

## **ESTIMATED COST OF RECOVERY**

Total estimated cost of bull trout recovery in the Upper Columbia Recovery Unit is \$15 million. Total costs include estimates of expenditures by local, Tribal, State, and Federal governments and private business and individuals. The estimate includes recovery actions associated with the Wenatchee, Entiat, and Methow core areas as well as identified research needs (*e.g.*, Columbia River). These costs are attributed to bull trout conservation, but other aquatic species will also benefit. Cost estimates are not provided for tasks which are normal agency responsibilities under existing authorities.

## **ESTIMATED DATE OF RECOVERY**

The time required to achieve recovery depends on bull trout status, factors affecting bull trout, implementation and effectiveness of recovery tasks, and responses to recovery tasks. A tremendous amount of work will be required to restore impaired habitat, reconnect habitat, and eliminate threats from nonnative

species. Three to five bull trout generations (15 to 25 years), or possibly longer, may be necessary before identified threats to the species can be significantly reduced and bull trout can be considered eligible for delisting.

Degradation and fragmentation of bull trout habitat in the Upper Columbia Recovery Unit have resulted in populations that are at high risk. Ultimately, these threats must be addressed in the near future if recovery is to be achieved. If identified actions are implemented, the Upper Columbia Recovery Unit Team anticipates that recovery could occur within 25 to 50 years.